PERGAMON Journal of the Franklin Institute 340 (2003) II–V

Journal *of* The Franklin Institute

www.elsevier.com/locate/jfranklin

Contents of Volume 340

Number 1

ARTICLES

BOND GRAPH APPROACH AS ANALYSIS TOOL IN THERMOFLUID MODEL LIBRARY CONCEPTION
Belkacem Ould Bouamama 1

A WALSH FUNCTION METHOD FOR A NON-LINEAR VOLTERRA INTEGRAL EQUATION
B.G. Sloss and W.F. Blyth 25

UNKNOWN INPUT OBSERVERS FOR SINGULAR SYSTEMS DESIGNED BY EIGENSTRUCTURE ASSIGNMENT
Sheng-Fuu Lin and An-Ping Wang 43

MODELING OF MUSCULOSKELETAL STRUCTURE AND FUNCTION USING A MODULAR BOND GRAPH APPROACH
Laura A. Wojcik 63

Number 2

TIME-FREQUENCY ANALYSIS AS ASYMPTOTIC METHOD
David Vakman 77

ON PARAMETERIZATION DESIGN FOR LINEAR OBSERVERS
Zhiwei Gao and Albert T.P. So 87

ALGORITHM FOR ADAPTIVELY SMOOTHING THE LOG-PERIODOGRAM
Radu Neagu and Igor Zurbenko 103

FEATURE EXTRACTION RELATED TO BEARING DAMAGE IN ELECTRIC MOTORS BY WAVELET ANALYSIS
Serhat Seker and Emine Ayaz 125

ON THE UNCERTAIN VARIABLE STRUCTURE SYSTEMS WITH BOUNDED CONTROLLERS
Han Ho Choi 135

A Frequency Domain Approach to State Estimation
H.J. Marquez 147

Numbers 3–4

Special Issue on the Work and Creative Processes of the 2002 Franklin Institute Laureates

Editorial

Reflections of the Chair of the Committee on Science and the Arts
Bradford A. Jameson 159

Issues in Scientific Creativity: Insight, Perseverance and Personal Technique
Profiles of the 2002 Franklin Institute Laureates
Beth Adelson 163

Molecular Mechanics—Modeling Molecular Structure and Energetics: The 2002 Benjamin Franklin Medal in Chemistry Presented to Norman Allinger
Charles F. Cooper 191

Metastability, Pattern Formation, and the Discovery of Quasicrystals: The 2002 Bower Award for Achievement in Science. Presented to John Werner Cahn
Dieter Forster 205

Developing the *Agrobacterium* Ti Plasmid as a Vector for Plant Genetic Engineering: The 2002 Benjamin Franklin Medal in Life Sciences Presented to Mary-Dell Chilton
Mark Jacobs 213

A Major Milestone in Nanoscale Material Science: The 2002 Benjamin Franklin Medal in Physics Presented to Sumio Iijima
Elias Burstein 221

Pioneering and Continuing Contributions to The Semiconductor Industry. The Franklin Institute's 2002 Bower Award for Business Leadership Presented to Gordon E. Moore
Intel Corporation 243

The Optoelectronic Technology of Gallium Nitride: The 2002 Benjamin Franklin Medal in Engineering Presented to Shuji Nakamura
Aline Akselrad 249

MATERIALS AND NANOTECHNOLOGY
Alexandra Navrotsky 263

MULTIDISCIPLINARY CONTRIBUTIONS FROM CRYSTAL CHEMICAL AND GEOCHEMICAL STUDIES: THE 2002 BENJAMIN FRANKLIN MEDAL IN EARTH SCIENCE PRESENTED TO ALEXANDRA NAVROTSKY
Gene Ulmer 269

BRINGING CONSIDERATIONS OF SITUATED ACTION TO BEAR ON THE PARADIGM OF COGNITIVE MODELING: THE 2002 BENJAMIN FRANKLIN MEDAL IN COMPUTER AND COGNITIVE SCIENCE PRESENTED TO LUCY SUCHMAN
Beth Adelson 283

Number 5

BOUNDARY CONTROL OF A LINEAR DISTRIBUTED PARAMETER BIOPROCESS
Hideki Sano 293

THE SOLUTIONS OF VIBRATION CONTROL PROBLEMS USING ARTIFICIAL NEURAL NETWORKS
Hasan Alli, Ayşegül Uçar and Yakup Demir 307

AN OPTIMAL CONTROL PROBLEM FOR A GENERALIZED VIBRATION SYSTEM IN ESTIMATING INSTANTANEOUSLY THE OPTIMAL CONTROL FORCES
Cheng-Hung Huang 327

TWO DIRECT TUSTIN DISCRETIZATION METHODS FOR FRACTIONAL-ORDER DIFFERENTIATOR/INTEGRATOR
Blas M. Vinagre, Yang Quan Chen and Ivo Petráš 349

ON "AN IMPROVED APPROACH FOR NONLINEAR SYSTEM IDENTIFICATION USING NEURAL NETWORKS"
Andrew I. Hanna and Danilo P. Mandic 363

LINEAR CONTROLLER ANALYSIS AND DESIGN FOR SYSTEMS WITH INPUT HYSTERESES NONLINEARITIES
Wassim M. Haddad, VijaySekhar Chellaboina and JinHyoung Oh 371

A FRACTIONAL GABOR EXPANSION
Aydın Akan and Yalçın Çekiç 391

Numbers 6–7

ON SIMPLIFIED HURWITZ STABILITY CONDITIONS FOR LOW-DEGREE WEIGHTED DIAMOND POLYNOMIALS
Naohisa Otsuka and Takashi Okada 399

GENERATING MODEL OF A SUB-RAYLEIGH FADING
V. Lyandres 407

EXAMINATION OF CHAOTIC BEHAVIOURS USING BOND GRAPH MODEL
Arif Gülten and Mustafa Türk 415

DELAY-DEPENDENT STOCHASTIC STABILITY AND H_∞ ANALYSIS FOR TIME-DELAY SYSTEMS WITH MARKOVIAN JUMPING PARAMETERS
Yong-Yan Cao, James Lam and Lisheng Hu 423

INDEPENDENT FORCE AND POSITION CONTROL FOR COOPERATING MANIPULATORS
K.G. Tzierakis and F.N. Koumboulis 435

FURTHER RESULTS ON THE MEASUREMENT OF SOLUTION BOUNDS OF THE GENERALIZED LYAPUNOV EQUATIONS
C.H. Lee 461

EXPONENTIAL STABILITY FOR LINEAR TIME-DELAY SYSTEMS WITH DELAY DEPENDENCE
Pin-Lin Liu 481

FADING MEMORY AND STABILITY
Guoqiang Zang and Pablo A. Iglesias 489

A CORRELATION-BASED COMPUTATIONAL MODEL FOR SYNTHESIZING LONG-RANGE DEPENDENT DATA
Ming Li and Chi-Hung Chi 503

DISTURBANCE ATTENUATION VIA STRICTLY POSITIVE REAL COMPENSATORS
Kyung-Soo Kim and Faryar Jabbari 515